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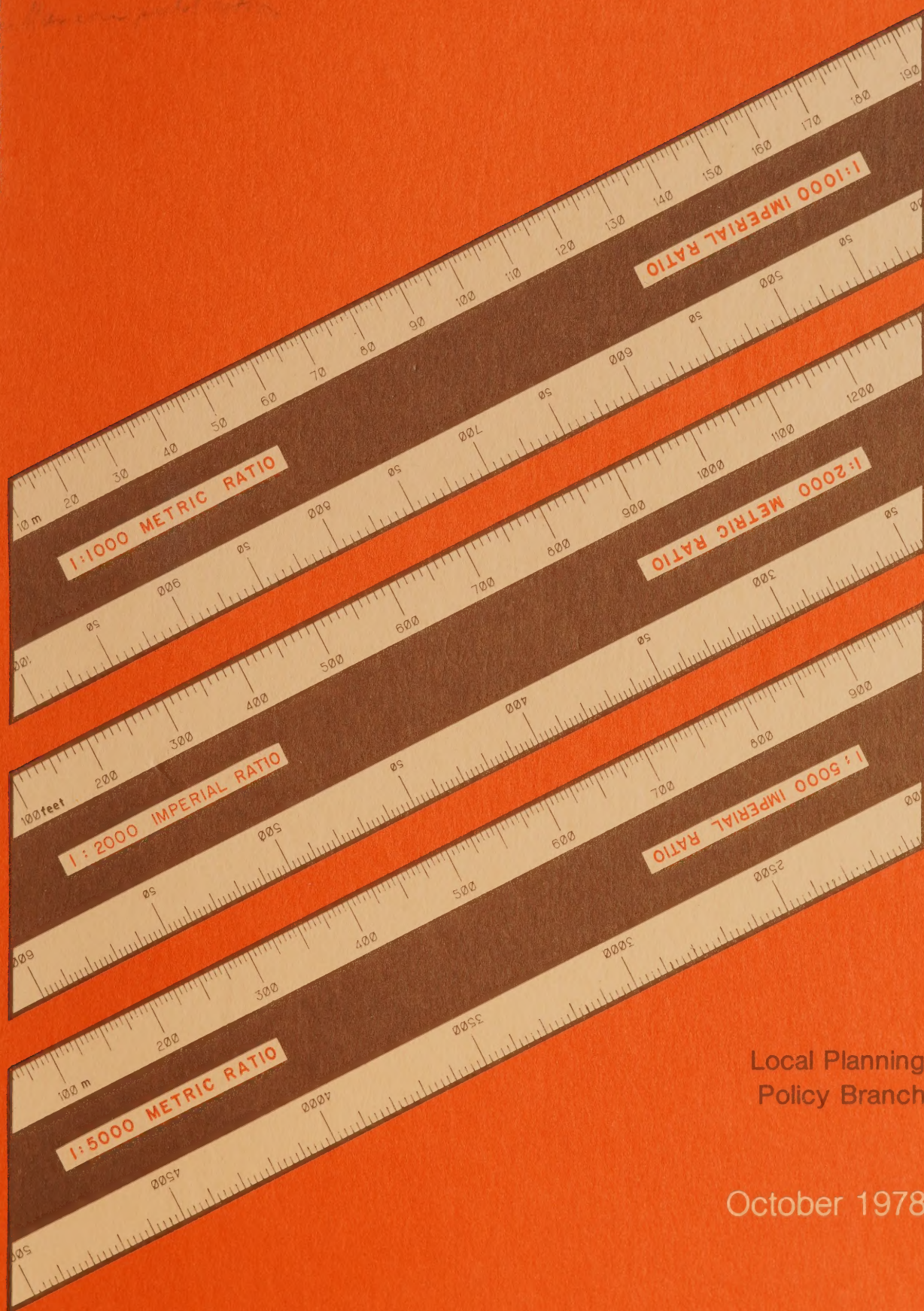


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Metric Conversion of Planning Documents



Local Planning
Policy Branch

October 1978



Ministry of
Housing

Ontario

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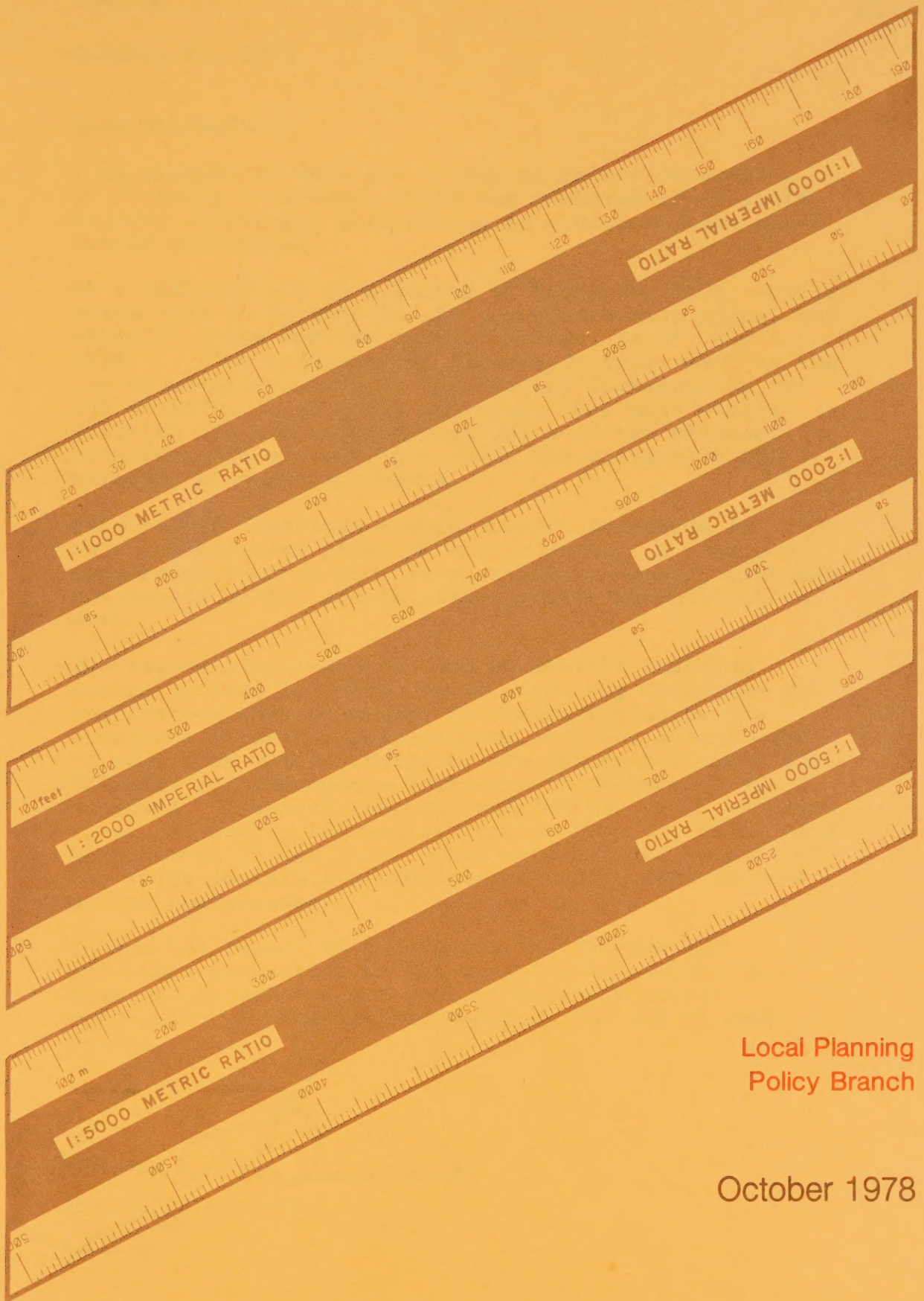
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Ministry of
Housing

Metric Conversion of Planning Documents



Local Planning
Policy Branch

October 1978



Office of the
Minister

Ministry
of
Housing

Hearst Block
Queen's Park
Toronto Ontario
M7A 2K5
416/965-6456,

October 23, 1978

Dear Sir/Madam:

I am pleased to send you a copy of *Metric Conversion of Planning Documents*, which was prepared by my staff to provide further information to municipalities about metric conversion.

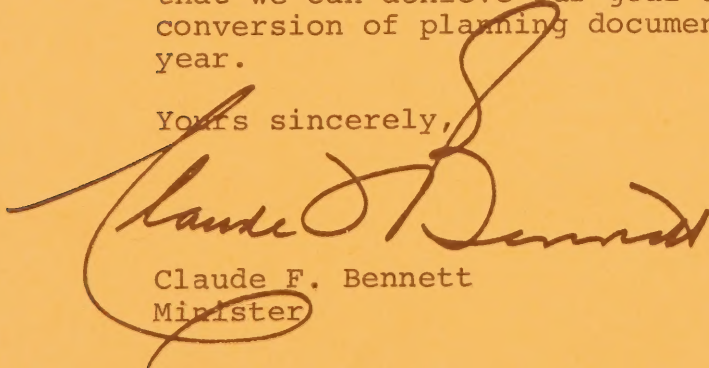
As I informed you in a letter of April 28, 1978, metric units were to be used in all new subdivision plans, new official plans and new zoning by-laws, as of July 1, 1978. I also indicated my Ministry's commitment to the use of metric units only in planning documents by the end of 1979. I am happy to report that many municipalities are now using metric units in new planning documents and are moving towards the conversion of existing planning documents.

This report describes how to convert standards in existing official plans to metric units. I urge you to convert them as soon as possible, to comply with the Ministry's policy and to assist you in administrative work.

The report also indicates how to convert existing zoning by-laws to metric units. You may undertake the preparatory work necessary to change zoning by-law standards to metric measurements, but you should wait to adopt the metric zoning by-law amendments until The Planning Act amendments dealing with conversion are approved. I expect that the amendments, which received first reading in the Legislature on June 22, 1978, will be approved in the fall. They were delayed because of the large legislative backlog during the last session of the Legislature.

I hope the report will help you to continue the efficient transition to the use of metric units so that we can achieve our goal of complete metric conversion of planning documents by the end of next year.

Yours sincerely,


Claude F. Bennett
Minister



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Introduction

The transition to the use of metric units in planning documents is well underway in Ontario and is expected to be complete by the end of 1979. New plans that contain metric measurements are already being processed and many municipalities have begun to convert existing planning documents.

The Ministry of Housing has prepared *Metric Conversion of Planning Documents* to answer a number of questions that have arisen during the transition period.

The report has been divided into three sections. Part 1 deals with provincial policy on new and existing planning documents. It outlines the dates for the use of metric units in the preparation of new plans of subdivision, other descriptions of land, official plans and zoning by-laws. It also describes the procedure that is to be used to convert existing official plans to metric units.

The amendments to The Planning Act, which were introduced June 22, 1978 in the Ontario Legislature, are described in Part 2. The effect the amendments will have on zoning by-laws, parkland conveyance standards and key plans in plans of subdivision is discussed.

Tables and options that can be used to convert standards in both existing official plans and zoning by-laws to metric units are set out in Part 3. Municipal officials who are undertaking to transform existing planning documents should read the entire report carefully and pay particular attention to the problems that can be created by the conversion of some standards.

Planning documents that are converted to metric units must not contain imperial standards. The use of metric units only in new and converted documents will avoid confusion, administrative problems and possible legal complications.

PART 1

A. The use of metric units in new planning documents

Municipalities are reminded that the Minister of Housing established July 1, 1978 as the date after which metric units must be used in all new planning documents. The intention to require the use of metric measurements was set forth in *Guidelines for Metric Conversion of Planning Documents*, which were distributed in September, 1977 and in the Minister's letter of April 28, 1978. The letter was circulated to all municipalities as well as professionals and groups interested in planning matters.

In cases where the deadline will cause major problems, municipalities should contact the Ministry of Housing, or appropriate delegated authority to make alternate arrangements. Projects that are being completed in stages, or have had a substantial amount of preparatory work done on them prior to the deadline, may not be required to meet the conversion date.

The target dates that apply to new planning documents are briefly described in the sections that follow.

i) Plans of subdivision

New plans of subdivision and new descriptions of land, lot severances for example, must be submitted to the appropriate approving authority in metric units, after July 1, 1978. The appropriate approving authority, which depends upon the type of planning document, may be the Ministry of Housing, the regional municipality, or other delegated municipality, a land division committee or a committee of adjustment.

ii) Zoning by-laws

New zoning by-laws must be submitted to the Ontario Municipal Board (OMB) in metric units. This rule came into effect on July 1, 1978. By the end of 1979, existing zoning by-laws must be converted to metric units, in accordance with the policy established by the Minister of Housing.

Existing zoning by-laws may be changed now to metric units provided the exact conversion is substituted for the imperial measurement. The procedure for exact conversion is illustrated in Part 3, Option 1 of this report. Municipalities that prefer to vary the exact conversion of existing imperial standards to produce more convenient numbers should wait until the pending amendments to The Planning Act are adopted. The amendments will allow the rounding of converted numbers within specified limits without Ontario Municipal Board approval.

iii) Official plans

All new official plans submitted for approval must use metric measurements. The deadline that was established was July 1, 1978.

Unlike zoning by-laws, procedures for conversion of official plan standards that allow the substitution of rounded numbers are available to municipalities without approval of The Planning Act amendments. The procedures for converting official plans are outlined in Part 1, Section B. Options, examples and tables to assist in making the change are given in Part 3.

iv) Other planning documents

Similarly, as of the July 1, 1978 deadline, all other planning documents, for example, maintenance and occupancy by-laws, were to be prepared in metric units. Methods similar to those available to convert official plans and zoning by-laws may be used to transform metric units in other planning documents. The procedures are described in Part 3 of this report.

v) Registration of documents

After July 1, 1976, documents could be registered in metric units under the following Acts:

- The Land Titles Act
- The Registry Act
- The Condominium Act
- The Certification of Titles Act

vi) Committees of adjustment and land division committees

Applications for new lot severance, should be written in metric units after July 1, 1978. Land division committees and committees of adjustment may continue to accept applications in imperial measurements during the period while the relevant by-laws are being converted to metric units.

B. Conversion procedure for existing official plans

Municipalities that have set out linear, area or density standards in their official plans will be required to convert them to metric units by January, 1979. Procedure options, similar to those that are proposed for the conversion of existing zoning by-laws, are available to change present official plan standards to metric units.

Municipalities that convert existing official plans to metric in accordance with the procedures indicated in this report will not be required to hold public meetings. Approval of the amended document should be granted quickly by the appropriate review agency, because it will not be necessary to circulate the plan for comment.

Procedures that may be used to convert existing official plans to metric units are provided in Part 3 of the report. Five options, with examples, are given to show how each is used. Options 2 and 4, which result in rounded numbers, under most circumstances should be used to convert standards in official plans. They permit the selection of new standards without decimals, which are, therefore, more convenient to use. The conversion procedure for density provisions is explained in Part 3, Section G.

Option 1, 3 and 5 have been included to show the variety of procedures that are available to convert existing official plans and zoning by-laws. They allow the calculation of more precise numbers that may be needed to deal with special situations which may arise in some municipalities.

C. Adoption of standards used by other agencies

Municipalities that intend to adopt standards used by another agency or level of government, (i.e. MTC) should consult with the originating body before incorporating such measurements into planning documents. You are reminded that new official plan and zoning by-law standards must be within the limits set out in this report and the pending amendments to The Planning Act.

Specific questions about the use of the conversion options should be directed to the Ministry of Housing.

D. Delegation

Where authority is delegated under Section 44b of The Planning Act the guidelines and policies of this document are to apply.

PART 2

A. Pending amendments to The Planning Act

Amendments to The Planning Act, which were given first reading in the Ontario Legislature on June 22, 1978 and are intended to be finally dealt with during the Fall Session, will facilitate the use of metric measurements in municipal planning documents. The amendments will simplify the conversion process and provide municipalities with some flexibility in setting new metric standards in existing zoning by-laws.

The amendments provide for the conversion of imperial standards in existing zoning by-laws to metric units. The converted standards may be varied within specified limits, which will not require the approval of the OMB. The effect the amendments will have on planning documents is described in the subsections that follow.

i) Units of measurement

The amendments (for exact wording see Appendix I) provide for the conversion to metric units of all linear, area and other measurements in existing zoning by-laws. Tables and examples to illustrate the conversion procedure are provided in Part 3 of this report.

Linear measurements will be expressed in metres (m) and area measurements will be given in square metres (m²).

ii) Plans of subdivision

The scale of key plans as set out in Section 33(2)(b) of The Planning Act, with the amendments, will change to one centimetre to 100 metres (1:10 000) from the present requirement of one inch to 1 000 feet (1:12 000).

iii) Parkland conveyance standard

Section 35b(3) of The Planning Act, which permits municipalities to require the conveyance of land for park purposes under special circumstances, will be amended. The present wording of the section provides for the conveyance of parkland at the rate of up to one acre per 120 dwelling units. Under the amendment, the new standard will be up to one hectare per 300 dwelling units.

The amendment represents only a 1.1 per cent decrease in the conveyance standard.

iv) Restricted area (zoning) by-laws

Zoning by-laws generally contain many standards that are expressed as numerical values; lot sizes, setbacks, parking areas, to name a few, are set out in linear or area measurements. The standards will be converted to metric units, in accordance with Section 45a(1) of The Planning Act, when the amendments are approved.

v) Linear and area measurements

The first step in changing imperial to metric standards is the calculation of the exact conversion. Sub-sections 45a(1)(a) and (b) then permit the modification of zoning standards within specified limits. The amendments will allow converted numbers to be rounded to the next plus or minus 0.5 m or 0.5 m² or alteration by up to five per cent from the exact conversion. Options and tables in Part 3 describe, in detail how the conversions are to be made.

vi) Other units of measurement

Section 45a(1)(b) permits the variation, by as much as five per cent, of other units of measurement. For example, performance standards that deal with weight, pressure and horsepower may be modified after they have been converted to metric units. Conversions are made using factors derived from Schedules I and II of the Canada Weights and Measures Act. Municipalities that have parking restrictions for trucks based on mass (weight), may wish to update the method of classification used. Such a change would require the approval of the OMB.

vii) Non-conforming uses

Section 45a will provide that if zoning by-laws are converted in accordance with this section non-conforming uses of land will not be created. Thus, the existing property rights of landowners will be protected if conversion results in standards being created, which are slightly higher or lower than those contained in the original by-law.

viii) OMB approval

The OMB will not be required to approve metric conversion by-laws that are prepared in accordance with Section 45a(1) of the proposed amendments to The Planning Act. Exemption from Board approval for conversion by-laws will avoid unnecessary delays and reduce the administrative workload for what are relatively minor adjustments in standards. OMB approval must be secured, however, for by-laws that do not comply with the proposed amendments to The Planning Act or that contain zoning changes.

B. Conversion procedure for existing zoning by-laws

Exact metric equivalents of imperial standards must be calculated before rounding is used to deduce more convenient numbers. Some conversion factors derived from the Canada Weights and Measures Act are listed in Appendix III.

After the exact conversion has been made, any of the five options outlined in Part 3 may be used to convert existing standards to metric units. In Part 3, examples are provided to show how each option may be used to produce acceptable metric equivalents for imperial zoning standards. In addition, tables, which set out the metric equivalents of linear and area measurements commonly found in zoning by-laws, are included for your convenience.

C. To adopt a metric conversion zoning by-law

The steps set out in this section indicate the procedure that should be used to adopt a metric conversion by-law. To avoid the necessity of submitting metric conversion by-laws to the OMB, municipalities should not adopt them until the pending amendments to The Planning Act are approved by the Legislature. Preparatory work necessary to carry out the conversion should, however, be undertaken as soon as possible, in anticipation that the amendments will be passed in the near future.

- 1) Draft an appropriate amending by-law that contains the new standard derived by following the procedures as indicated in Part 3. For your convenience, a copy of a model by-law, which may be used to incorporate metric standards into existing zoning by-laws, is provided in Appendix II.
- 2) Have the municipal council approve the amending by-law, after The Planning Act amendments are adopted. (No OMB approval will be required if the proposed procedure for conversion shown in Part 3 is followed.)
- 3) An office consolidation of the zoning by-law that incorporates the new metric standards should be prepared for the convenience of users.
- 4) Deposit a copy of the by-law with the Ministry of Housing or with the appropriate reviewing authority, e.g. the regional municipality, within 30 days of passage by Council.
- 5) Municipalities must retain a copy of the original by-law that contains imperial measurements. It could be used in the event that a legal dispute about the conversion of the standards to metric units arises.

PART 3

A. Conversion options

The first step to convert an official plan or zoning by-law is to determine the exact metric equivalent of the existing imperial standard. All linear measurements should be converted, initially, to metres.

In some instances, for example in density provisions, municipalities may find it convenient to express standards in hectares. Area measurements, including acres, first should be converted to square metres, to ensure reasonable accuracy in rounding.

Municipalities may wish to express larger area measurements (those over two acres) in hectares. To derive hectares from square metres, the decimal is simply moved four places to the left. For example ten acres, which is the equivalent of 40 468.6 m² may be converted to 4.0 ha by moving the decimal four places to the left.

The use of column 2 in Table 3 helps to ensure familiarity with the exact conversion, which is necessary to produce reasonable rounded equivalents.

Municipal employees should check to determine if the rounded number is within the five per cent limits permitted by The Planning Act amendments. In the example used in this section, 4.0 ha (rounded) is within the limits.

Units smaller than one metre (1.0 m) may be derived by moving the decimal place to the left. For example, one centimetre may be expressed as 0.01 m and one millimetre as 0.001 m.

B. The selection of rounded metric substitutes

Municipal employees who are converting official plans or zoning by-laws, should evaluate the effect of rounded metric numbers on existing standards. The imprudent substitution of a rounded metric measurement could cause unexpected or undesirable changes in planning standards such as density provisions. For example, if one acre were, after conversion, rounded to the nearest 0.5 ha, density standards could be altered by twenty-five per cent. It would create fewer problems if 0.4 ha were selected as the equivalent for one acre.

A similar problem could arise in the rounding of linear measurements. Although it is permissible to round imperial linear numbers by 0.5 units, large variations may occur, particularly in smaller measurements. The Rounded Equivalent column in Table 1 suggests 0.5 m as a substitute for one foot, but 0.3 m may be a more accurate alternative. It is important that you exercise discretion and care in the selection of new metric standards.

C. Rounded equivalents

In some instances, numbers in the tables have been rounded within five per cent of the exact conversion. They, therefore, fall outside the limits that would be in effect if the 0.5 unit rounding procedure outlined in Option 2 were used. For example, the rounded equivalent for 200 feet, a lot depth commonly used in areas where there are no piped sewer and water services, is 60.0 m. Although this figure is within the five per cent range, it is not within 0.5 unit rounding limits. Rounding 60.96 m (200 feet) within 0.5 units would produce standards of 60.5 m or 61.0 m.

The five per cent variation allows more latitude in the selection of new metric standards; in this example 60.0 m is a more convenient number with which to work. In each situation, municipal officials should weigh the advantages of 0.5 unit rounding and the five per cent variation before setting new standards.

Officials, who are converting planning documents should be aware that there may be inconsistencies between the product (area) of rounded metric dimensions in Table 1 and the rounded areas indicated in Table 2. For example, lot dimensions of 75 feet x 200 feet (area 15 000 square feet) when converted using Table 1 results in measures of 23.0 m x 60.0 m. When multiplied, they produce an area of 1 380 m², when the rounded conversion for 15 000 square feet is 1 400 m².

D. Tables and examples

The appropriate metric equivalents for commonly used imperial measurements may be found in Tables 1, 2 and 3. The tables are constructed to show the imperial measurement, the exact metric conversion, the minimum-maximum range allowed and the rounded equivalent.

Exact metric equivalents may be calculated by multiplying the imperial number by the proper conversion factor, which may be found in Appendix III.

In the minimum-maximum column, linear measurements less than 19 feet in Table 1 and area measurements up to 100 square feet in Table 2 are rounded to the nearest half unit; larger numbers are rounded within five per cent of the exact conversion. Half unit rounding and five per cent variation are used in the appropriate places to give the greatest flexibility in the tables for establishing new metric standards.

Values in column 4 of Table 1 above 18 feet have been rounded, in most instances, to the whole number nearest the midpoint of minimum-maximum range. To illustrate how the rounding was accomplished, 150 feet was converted exactly to 45.72 m, minimum-maximum range of 43.434-48.006, was derived. The midpoint between the two limits is 45.72, which leads to 46.0 m being selected as the rounded equivalent.

The rounded equivalent in column 4, may not, in all cases, agree with new metric standards set by other provincial agencies. Such discrepancies should be noted and reconciled, where possible, to avoid conflicting standards. It is worthwhile to point out again that judgement must be exercised in the selection of new standards.

For example, the rounded metric equivalent for 150 feet in Table 1 is 46.0 m. The Ministry of Transportation and Communications, however, has set 45.0 m as the replacement standard for road rights of way that were formerly 150 feet wide.

The rounded numbers may not be suitable in every situation. Height, set backs, road widths and lot dimensions that use the same imperial standard, may each require different rounded metric measurements that are appropriate to the specific situation. You are advised to use discretion in selecting new metric equivalents to avoid unforeseen problems.

E. Conversion options

After the exact conversion has been made, one of the options that follows may be used.

- 1) The exact conversion may be substituted for the imperial measurement; or
- 2) The exact conversion may be rounded to the next higher or lower 0.5 m or 0.5 m²; or
- 3) The exact conversion may be varied by five per cent; or
- 4) A measurement that falls within the 0.5 unit or the five per cent variation range of the exact conversion may be substituted for the imperial unit.
- 5) A combination of Options 1, 2, 3 and 4 may be used in the conversion of existing planning documents to metric units.

Examples are provided for your convenience in this section to show how each option may be used to obtain acceptable metric equivalents of linear and area measurements commonly found in planning documents.

Option 1: Exact substitution

The exact metric equivalent of an imperial standard may be substituted in existing official plan or zoning by-law. Exact equivalents, however, may contain several decimal places that will make standards difficult to use. It is, therefore, recommended that, in most circumstances, converted numbers be rounded for convenience. It is advisable to wait until The Planning Act amendments are approved before adopting rounded zoning by-law standards, to avoid the necessity of submission to the OMB.

To find the metric equivalent of 18 feet:

- 1) Locate the imperial measurement in Table 1, column 1, in this case 18 feet.
- 2) Move to column 2 to find the exact conversion; 5.486 4 m.

The exact conversion is then substituted for the imperial number.

To find the equivalent metric value of an imperial linear number, Table 1 may be used; similarly, Table 2 or Table 3 may be used to convert area measurements.

Option 2: Half unit rounding

The exact conversion of an existing planning standard may be rounded to the next higher or lower half square metre. Section 45a(1)(a) of pending The Planning Act amendments permits existing zoning provisions to be rounded by as much as 0.5 m or 0.5 m².

As indicated in the note at the end of Table 1, rounded equivalents for linear measurements less than 19 feet have been derived by the 0.5 unit procedure to allow greater latitude to set new standards. A similar approach has been taken for numbers up to 100 square feet in Table 2. Although it is permissible to round small numbers by 0.5 units, large variations may occur. The selection of 0.3 m as a substitute for one foot, may result in a more appropriate standard than would be the case with 0.5 m.

To find the metric equivalent of four feet by the 0.5 unit rounding procedure:

- 1) Locate the imperial measurement, four feet, under column 1, in Table 1;
- 2) Move to column 2 to find the exact conversion, 1.219 2 m;

- 3) Locate the Rounded Equivalent in column 4, 1.0 m or choose an appropriate metric equivalent;

- 4) Substitute the selected dimension for four feet in the metric zoning by-law amendment.

To round numbers greater than 18 feet to the nearest half unit, 50 feet for example, find the exact metric equivalent, 15.24 m, in column 2. The number may be rounded to 15.0 m, as indicated in column 4 and then substituted for the imperial unit.

A procedure similar to that shown in steps 1-4 may be used to convert area measurements, but Tables 2 or 3 are used instead.

Option 3: Five per cent minimum-maximum variation

Rather than round the metric equivalent to the next plus or minus 0.5 m or 0.5 m², it may be varied by plus or minus five per cent.

Use the following steps to vary 75 feet by five per cent:

- 1) Locate the imperial number, 75 feet under column 1, in Table 1.
- 2) Move to column 2 to find the exact metric conversion; which is 22.86 m.
- 3) Choose either the minimum allowed 21.717 m or the maximum permitted 24.003 m as shown in column 3.

The number derived using Option 3 may contain several decimal places and for that reason be difficult to use.

Option 4: Substitution within five per cent or half unit range

Instead of choosing the minimum or maximum as indicated in Example 3, any number within the range may be selected.

Follow steps 1 and 2 as outlined in the previous option. As an alternative to using the minimum, 21.717 m or the maximum 24.003 m, a more convenient number may be used. In addition to the Rounded Equivalent, 23.0 m, shown in column 4, 22.0 m, 22.5 m, 23.5 m, or 24.0 may be used provided they are within the minimum-maximum range. In this example, 21.5 or 24.5 could not be used because they fall outside the permitted range.

A similar procedure is used to select a new metric standard that is within the 0.5 unit rounding range. Numbers outside the limit may not be selected if the 0.5 unit rounding procedure is used.

The number selected is then substituted for the imperial measurement in the metric conversion zoning by-law.

Option 5: Combination approach

Municipal officials may decide to use some or all of the above procedures to convert official plans or zoning by-laws to metric units. In some instances, one option may provide more latitude in the desired direction than another. You may choose the one that is best suited to your needs, but in most instances, Options 2, and 4 are preferred for the conversion of official plan standards.

The alteration of imperial zoning standards may require more precise numbers; therefore, the procedure that results in the desired standard should be selected from the five options described in this section.

F. Metric equivalents of numbers not listed in tables

Metric equivalents of linear or area measurements not listed in Tables 1, 2 or 3 may be derived by multiplying the imperial measurement by the appropriate conversion factor. The conversion factors are listed in Appendix III.

For example, to convert 38 feet to metres:

- 1) Multiply the number 38 feet $\times 0.3048 = 11.5824$ m. Use the exact metric equivalent as a substitute for the imperial measure; or
- 2) Round the exact metric equivalent to the next plus or minus 0.5 m; 11.5824 m is rounded to 11.5 m or 12.0 m; or
- 3) Vary the exact conversion by five per cent. Multiply $11.5824 \text{ m} \times .95 = 11.00328 \text{ m}$. Multiply $11.5824 \text{ m} \times 1.05 = 12.16152 \text{ m}$. Either 11.00328 m, the minimum, may be used or 12.16152 m, the maximum, may be used.
- 4) A more convenient number, such as 11.5 m or 12.0 m, may be used provided it falls within the five per cent minimum-maximum range.

Acres may be converted in a similar manner, but a different conversion factor is used. It may be found in Appendix III.

G. Density conversion

To convert measurements such as dwellings or population per acre to units per hectare, the steps outlined in this section may be used. To simplify the process, Table 4, which contains exact and rounded conversions for commonly used density standards expressed in units per acre are provided.

In the example below, five units per acre, a figure that is frequently used in single family neighbourhoods will be converted to hectares.

- 1) Locate the figure for which conversion is desired in column 1, five in this case.
- 2) It is converted to the exact metric equivalent by multiplying by the conversion factor $5 \times 2.4710538 = 12.355269$ units per hectare.
- 3) The exact conversion may be rounded within five per cent to produce a convenient number. In this case 12 u/ha, which represents a decrease in the imperial standard of 2.80 per cent.

A similar procedure may be used to determine the metric equivalent of other imperial density standards expressed in units per acre. Rounded numbers in Table 4 have been set so that multiples, such as 10 u.p.a. and 20 u.p.a. work out to 25 u/ha and 50 u/ha respectively.

H. Zoning by-law consolidations

Municipalities should prepare an office consolidation that includes the parent zoning by-law and all subsequent amendments made to it. The consolidation should simplify the work of municipal staff responsible for the administration of planning documents. It also will make it more convenient for members of council, the public and planning professionals to use the zoning by-law.

I. Conversion assistance

For general information about the conversion of planning documents to metric units, municipal officials should contact the local office of the Community Planning Advisory Branch. Branch offices are located at:

Ministry of Housing
Community Planning Advisory Branch
Central Region
2nd Floor, 47 Sheppard Avenue East
Toronto, Ontario M2N 5X5
(416/226-1855)

Ministry of Housing
Community Planning Advisory Branch
North West Region
435 James Street South
Thunder Bay, Ontario P7C 4T3
(807/475-1651)

Ministry of Housing
Community Planning Advisory Branch
South East Region
3rd Floor, 244 Rideau Street
Ottawa, Ontario K1N 5Y3
(613/233-9301)

Ministry of Housing
Community Planning Advisory Branch
North East Region
758 La Salle Blvd. West
Sudbury, Ontario P3A 1X3
(705/560-0120)

Ministry of Housing
Community Planning Advisory Branch
South West Region
7th Floor, 495 Richmond Street
London, Ontario N6A 5A9
(519/673-1611)

If special problems arise, which are associated with the conversion of existing documents or with the use of metric units in new documents, assistance may be sought from the appropriate agency. A list of the types of documents and the agencies that deal with them follows.

Zoning by-laws and committees of adjustment
Ministry of Housing
Operations and Development
Control Branch
7th and 8th Floors
56 Wellesley Street West
Toronto, Ontario M7A 2K4
(416/965-6418)

Official plans
Ministry of Housing
Official Plans Branch
7th Floor
56 Wellesley Street West
Toronto, Ontario M7A 2K4
(416/965-6418)

Subdivision plans
Ministry of Housing
Subdivisions Branch
8th Floor
56 Wellesley Street
Toronto, Ontario M7A 2K4
(416/965-6418)

or contact the appropriate delegated authority.

Table 1

Metric conversion of Imperial linear measurements

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
IMPERIAL	METRIC	METRIC	METRIC
	Exact conversion (ft. x 0.304 8)	Minimum-maximum*	Rounded equivalent
ft.	m	m	m
1	0.304 8	0.0-0.5	0.5
2	0.609 6	0.5-1.0	0.5
3	0.914 4	0.5-1.0	1.0
4	1.219 2	1.0-1.5	1.0
5	1.524 0	1.5-2.0	1.5
6	1.828 8	1.5-2.0	2.0
7	2.133 6	2.0-2.5	2.0
8	2.438 4	2.0-2.5	2.5
9	2.743 2	2.5-3.0	2.5
10	3.048 0	3.0-3.5	3.0
11	3.352 8	3.0-3.5	3.5
12	3.657 6	3.5-4.0	3.5
13	3.962 4	3.5-4.0	4.0
14	4.267 2	4.0-4.5	4.0
15	4.572 0	4.5-5.0	5.0
16	4.876 8	4.5-5.0	5.0
17	5.181 6	5.0-5.5	5.5
18	5.486 4	5.0-5.5	5.5
19	5.791 2	5.501 64-6.080 76	6.0
20	6.096 0	5.791 2 -6.400 80	6.0
25	7.620 0	7.239 -8.001 00	7.5
30	9.144 0	8.686 8-9.601 20	9.0
35	10.668 0	10.134 6-11.201 40	10.5
40	12.192 0	11.582 4-12.801 60	12.0
45	13.716 0	13.030 2-14.401 80	13.5
50	15.240 0	14.478 -16.002 00	15.0
55	16.764 0	15.925 8 -17.602 20	16.0
60	18.288 0	17.373 6 -19.202 40	18.0
66	20.116 8	19.110 96-21.122 64	20.0
70	21.336 0	20.269 2 -22.402 80	22.0
75	22.860 0	21.717 -24.003 00	23.0
80	24.384 0	23.164 8 -25.603 20	24.0
86	26.212 8	24.902 16-27.523 44	26.0
90	27.432 0	26.060 4 -28.803 60	27.0
100	30.480 0	28.956 -32.004 00	30.0

(cont.)

Table 1 (cont.)

Metric conversion of imperial linear measurements

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
IMPERIAL	METRIC	METRIC	METRIC
	Exact conversion (ft. x 0.304 8)	Minimum-maximum*	Rounded equivalent
ft.	m	m	m
110	33.528 0	31.851 6 -35.204 40	35.0
120	36.576 0	34.747 2 -38.404 80	36.5
125	38.100 0	36.195 00-40.005 00	38.0
130	39.624 0	37.642 80-41.605 20	40.0
135	41.148 0	39.090 60-43.205 40	41.0
140	42.672 0	40.538 40-44.805 60	43.0
145	44.196 0	41.986 20-46.405 80	44.0
150	45.720 0	43.434 00-48.006 00	46.0
155	47.244 0	44.881 80-49.606 20	47.0
160	48.768 0	46.329 60-51.206 40	49.0
165	50.292 0	47.777 40-52.806 60	50.0
170	51.816 0	49.225 20-54.406 80	52.0
175	53.340 0	50.673 00-56.007 00	53.0
180	54.864 0	52.120 80-57.607 20	55.0
185	56.388 0	53.568 60-59.207 40	57.0
190	57.912 0	55.016 40-60.807 60	58.0
195	59.436 0	56.464 20-62.407 80	59.0
200	60.960 0	57.912 00-64.008 00	60.0
300	91.440 0	86.868 00-96.012 00	90.0
400	121.920 0	115.824 00-128.016 00	120.0
500	152.400 0	144.780 00-160.020 00	150.0
600	182.880 0	173.736 00-192.024 00	180.0
700	213.360 0	202.692 00-224.028 00	215.0
800	243.840 0	231.648 00-256.032 00	245.0
900	274.320 0	260.604 00-288.036 00	275.0
1 000	304.800 0	289.560 00-320.040 00	300.0
1 100	335.280 0	318.516 00-352.044 00	335.0
1 200	365.760 0	347.472 00-384.048 00	365.0
1 300	396.240 0	376.428 00-416.052 00	385.0
1 400	426.720 0	405.384 00-448.056 00	425.0
1 500	457.200 0	434.340 00-480.060 00	450.00

*Note: Column 3 indicates the range within which new standards may be established without Ontario Municipal Board approval. Minimum-maximum values shown less than 5.501 64 metres (19 feet) are rounded to the nearest 0.5 unit to pro-

vide greater flexibility. For measurements greater than 5.501 64 metres, variation by five per cent gives a wider choice of numbers that may be used to set new metric standards.

Table 2

Metric conversion of imperial area measurements

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
IMPERIAL	METRIC	METRIC	METRIC
	Exact conversion (sq. ft. x 0.092 903 04)	Minimum-maximum	Rounded equivalent
sq. ft.	m ²	m ²	m ²
1	0.092 903 04	0.0-0.5	0.5
2	0.185 806 08	0.0-0.5	0.5
3	0.278 709 12	0.0-0.5	0.5
4	0.371 612 16	0.0-0.5	0.5
5	0.464 515 20	0.0-0.5	0.5
6	0.557 418 24	0.5-1.0	0.5
7	0.650 321 28	0.5-1.0	0.5
8	0.743 224 32	0.5-1.0	0.5
9	0.836 127 36	0.5-1.0	1.0
10	0.929 030 40	0.5-1.0	1.0
11	1.021 933 44	1.0-1.5	1.0
12	1.114 836 48	1.0-1.5	1.0
13	1.207 739 52	1.0-1.5	1.0
14	1.300 642 56	1.0-1.5	1.5
15	1.393 545 60	1.0-1.5	1.5
16	1.486 448 64	1.0-1.5	1.5
17	1.579 351 68	1.5-2.0	1.5
18	1.672 254 72	1.5-2.0	1.5
19	1.765 157 76	1.5-2.0	1.5
20	1.858 060 80	1.5-2.0	2.0
25	2.322 576 00	2.0-2.5	2.5
30	2.787 091 20	2.5-3.0	2.5
35	3.251 606 40	3.0-3.5	3.0
40	3.716 121 60	3.5-4.0	3.5
45	4.180 636 80	4.0-4.5	4.0
50	4.645 152 00	4.5-5.0	4.5
55	5.109 667 20	5.0-5.5	5.0
60	5.574 182 40	5.5-6.0	5.5
65	6.038 697 60	6.0-6.5	6.0
70	6.503 212 80	6.5-7.0	6.5
75	6.967 728 00	6.5-7.0	7.0
80	7.432 243 20	7.0-7.5	7.5
85	7.896 758 40	7.5-8.0	8.0
90	8.361 273 60	8.0-8.5	8.0
95	8.825 788 80	8.5-9.0	9.0
100	9.290 304 00	9.0-9.5	9.0
200	18.580 608 00	17.651 577 60-19.509 638 40	18.5
300	27.870 912 00	26.477 366 40-29.264 457 60	28.0
400	37.161 216 00	35.303 155 20-39.019 276 80	37.0
500	46.451 520 00	44.128 944 00-48.774 096 00	46.0

(cont.)

Table 2 (cont.)

Metric conversion of imperial area measurements

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
IMPERIAL	METRIC	METRIC	METRIC
	Exact conversion (sq. ft. x 0.092 903 04)	Minimum-maximum	Rounded equivalent
sq. ft.	m ²	m ²	m ²
600	55.741 824 00	52.954 732 80-58.528 915 20	55.0
700	65.032 128 00	61.780 521 60-68.283 734 40	65.0
800	74.322 432 00	70.606 310 40-78.038 553 60	75.0
900	83.612 736 00	79.432 099 20-87.793 372 80	83.5
1 000	92.903 040 00	88.257 888 00-97.548 192 00	93.0
1 050	97.548 192 00	92.670 782 40-102.425 601 60	95.0
1 100	102.193 344 00	97.083 676 80-107.303 011 20	100.0
1 200	111.483 648 00	105.909 465 60-117.057 830 40	110.0
1 300	120.773 952 00	114.735 254 40-126.812 649 60	120 0
1 400	130.064 256 00	123.561 043 20-136.567 468 80	130.0
1 500	139.354 560 00	132.386 832 00-146.322 288 00	140.0
1 600	148.644 864 00	141.212 620 80-156.077 107 20	150.0
1 700	157.935 168 00	150.038 409 60-165.831 926 40	160.0
1 800	167.225 472 00	158.864 198 40-175.586 745 60	170.0
1 900	176.515 776 00	167.689 987 20-185.341 564 80	175.0
2 000	185.806 080 00	176.515 776 00-195.096 384 00	185.0
3 000	278.709 120 00	264.773 664 00-292.644 576 00	280.0
4 000	371.612 160 00	353.031 552 00-390.192 768 00	375.0
5 000	464.515 200 00	441.289 440 00-487.740 960 00	460.0
6 000	557.418 240 00	529.547 328 00-585.289 152 00	550.0
7 000	650.321 280 00	617.805 216 00-682-837 344 00	650.0
7 500	696.772 800 00	661.934 160 00-731.611 440 00	700.0
8 000	743.224 320 00	706.063 104 00-780.385 536 00	750.0
9 000	836.127 360 00	794.320 992 00-877.933 728 00	840.0
10 000	929.030 400 00	882.578 880 00-975.481 920 00	900.0
11 000	1 021.933 440 00	970.836 768 00-1 073.030 112 00	1 000.0
12 000	1 114.836 480 00	1 059.094 656 00-1 170.578 304 00	1 100.0
13 000	1 207.739 520 00	1 147.352 544 00-1 268.126 496 00	1 200.0
14 000	1 300.642 560 00	1 235.610 432 00-1 365.674 688 00	1 300.0
15 000	1 393.545 600 00	1 323.868 320 00-1 463.222 880 00	1 400.0
16 000	1 486.448 640 00	1 412.126 208 00-1 560.771 072 00	1 500.0
17 000	1 579.351 680 00	1 500.384 096 00-1 658.319 264 00	1 550.0
18 000	1 672.254 720 00	1 588.641 984 00-1 755.867 456 00	1 650.0
19 000	1 765.157 760 00	1 676.899 872 00-1 853.415 648 00	1 750.0
20 000	1 858.060 800 00	1 765.157 760 00-1 950.963-840 00	1 850.0
21 000	1 950.963 840 00	1 853.415 648 00-2 048.512 032 00	1 950.0
22 000	2 043.866 880 00	1 941.673 536 00-2 146.060 224 00	2 050.0
23 000	2 136.769 920 00	2 029.931 424 00-2 243.608 416 00	2 100.0
24 000	2 229.672 960 00	2 118.189 312 00-2 341.156 608 00	2 200.0
25 000	2 322.576 000 00	2 206.447 200 00-2 438.704 800 00	2 300.0

Table 3
Metric conversion of acres

COLUMN 1 IMPERIAL	COLUMN 2 METRIC	COLUMN 3 METRIC	COLUMN 4 METRIC
	Exact conversion (sq. ft. x 0.092 903 04)	Minimum-maximum	Rounded equivalent
sq. ft. acre	m ² ha	m ²	m ² ha
21 780 0.5	2 023.428 211 20 0.202 343	1 922.256 801-2 124.599 622	2 000.0
43 560 1	4 046.856 422 40 0.404 686	3 844.513 601-4 249.199 244	4 000.0
87 120 2	8 093.712 844 80 0.809 371	7 689.027 203-8 498.398 487	8 000.0 0.8
217 800 5	20 234.282 112 00 2.023 4	19 222.568 006-21 245.996 218	20 000.0 2.0
435 600 10	40 468.564 224 00 4.046 86	38 445.136 013-42 491.992 435	40 000.0 4.0
653 400 15	60 702.846 336 00 6.070 28	57 667.704 019-63 737.988 653	60 000.0 6.0
871 200 20	80 937.128 448 00 8.093 72	76 890.272 026-84 983.984 870	80 000.0 8.0
1 089 000 25	101 171.410 560 00 10.117 1	96 112.840 032-106 229.981 088	100 000.0 10.0
1 306 800 30	121 405.692 672 00 12.140 6	115 335.408 038-127 475.977 306	121 000.0 12.0
1 742 400 40	161 874.256 896 00 16.187 4	153 780.544 051-169 967.969 741	161 000.0 16.0
2 178 000 50	202 342.821 120 00 20.234 3	192 225.680 064-212 459.962 176	202 000.0 20.0
4 356 000 100	404 685.642 240 00 40.468 6	384 451.360 128-424 919.924 352	404 000.0 40.5
6 969 600 160	647 497.027 584 00 64.749 7	615 122.176 205-679 871.878 963	647 000.0 64.5
8 712 000 200	809 371.284 480 00 80.937 1	768 902.720 256-849 839.848 704	809 000.0 81.0
13 068 000 300	1 214 056.926 720 00 121.405 7	1 153 354.080 384-1 274 759.773 056	1 214 000.0 121.5
17 424 000 400	1 618 742.568 960 00 161.874 3	1 537 805.440 512-1 699 679.697 408	1 618 000.0 161.0
21 780 000 500	2 023 428.211 200 00 202.342 8	1 922 256.800 640-2 124 599.621 760	2 023 000.0 202.5

Table 4

Metric conversion of imperial density standards

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
IMPERIAL	METRIC	METRIC	METRIC
u.p.a.	Exact conversion (u.p.a. x 2.471 053 8) u/ha	Minimum-maximum u/ha	Rounded equivalent u/ha
5	12.355 269	11.737 506-12.973 032	12.0
6	14.826 323	14.085 007-15.567 639	15.0
7	17.297 377	16.432 508-18.162 245	17.0
8	19.768 430	18.780 009-20.756 852	20.0
9	22.239 484	21.127 510-23.351 458	22.0
10	24.710 538	23.475 011-25.946 065	25.0
11	27.181 592	25.822 512-28.540 671	27.0
12	29.652 646	28.170 013-31.135 278	30.0
13	32.123 699	30.517 514-33.729 884	32.0
14	34.594 753	32.865 016-36.324 491	35.0
15	37.065 807	35.212 517-38.919 097	37.0
16	39.536 861	37.560 018-41.513 704	40.0
17	42.007 915	39.907 519-44.108 310	42.0
18	44.478 968	42.255 020-46.702 917	45.0
19	46.950 022	44.602 521-49.297 523	47.0
20	49.421 076	46.950 022-51.892 130	50.0
25	61.776 345	58.687 528-64.865 162	62.0
30	74.131 614	70.425 033-77.838 195	75.0
35	86.486 883	82.162 539-90.811 227	87.0
40	98.842 152	93.900 044-103.784 260	100.0
45	111.197 421	105.637 550-116.757 292	111.0
50	123.552 690	117.375 056-129.730 325	124.0
60	148.263 228	140.850 067-155.676 389	150.0
70	172.973 766	164.325 078-181.622 454	173.0
80	197.684 304	187.800 089-207.568 519	200.0
90	222.394 842	211.275 100-233.514 584	225.0
100	247.105 380	234.750 111-259.460 649	248.0
110	271.815 918	258.225 122-285.406 714	270.0
120	296.526 456	281.700 133-311.352 779	300.0
130	321.236 994	305.175 144-337.298 844	320.0
140	345.947 532	328.650 155-363.244 909	345.0
150	370.658 070	352.125 167-389.190 974	370.0

Appendix I

BILL 137

The Metric Conversion Statute Law Amendment Act, 1978

1st Reading

June 22nd, 1978

2nd Reading

3rd Reading

PART VII

MINISTRY OF HOUSING

R.S.O. 1970,
c. 349,
s. 33(2)(b),
amended

21.—(1) Clause *b* of subsection 2 of section 33 of *The Planning Act*, being chapter 349 of the Revised Statutes of Ontario, 1970, is amended by striking out "inch to 1,000 feet" in the first and second lines and inserting in lieu thereof "centimetre to 100 metres".

s. 35b(3),
amended

(2) Subsection 3 of section 35b of the said Act, as enacted by the Statutes of Ontario, 1973, chapter 168, section 10, is amended by striking out "acre for each 120" in the fourth line and inserting in lieu thereof "hectare for each 300".

s. 45a,
enacted

(3) The said Act is amended by adding thereto the following section:

Application
of s. 35(10)

45a.—(1) Subsection 10 of section 35 does not apply to a by-law that amends a by-law only to express a word, term or measurement in the by-law in a unit of measurement set out in Schedule I of the *Weights and Measures Act* (Canada) in accordance with the definitions set out in Schedule II of that Act and that,

R.S.C. 1970,
c. W-8

(a) does not round any measurement so expressed further than to the next higher or lower multiple of 0.5 metres or 0.5 square metres, as the case may be; or

(b) does not vary by more than 5 per cent any measurement so expressed.

Effect of
amendment
that
conforms
with
subsection 1

(2) Any land, building or structure that otherwise conforms with a by-law passed under section 35 or an order made by the Minister under section 32 does not cease to conform with the by-law or order by reason only of an amendment to the by-law or order that conforms with subsection 1.

Appendix II

Draft model amending by-law

NOTE: The model by-law that follows is provided only as a guide to format, the actual form and content should be verified with the municipality's solicitor.

Name of municipality

By-law number

A by-law to amend by-law number

Whereas the municipality has deemed it expedient to use metric units in its restricted area by-laws;

Now therefore the Municipal Council of enacts as follows

The provisions of the by-law number as amended by By-laws

are hereby amended by substituting for all imperial units therein, metric units as follows:

By-law number	Section	Sub-section	Imperial unit	Metric unit
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This by-law becomes effective on its final passing

Mayor Clerk

Date

Appendix III

Conversion factors

The factors for metric conversion listed below were derived from the federal *Weights and Measures Act*.

	To convert	Multiply by	To find
length	inches	0.025 4	metres (m)
	feet	0.304 8	metres (m)
	yards	0.914 4	metres (m)
	miles	1 609.344	metres (m)
		1.609 344	kilometres (km)
area	sq. feet	0.092 903 04	sq. metres (m ²)
	sq. yards	0.836 127 4	sq. metres (m ²)
	acres	4 046.856	sq. metres (m ²)
	acres	0.404 685 6	hectares (ha)
	sq. miles	2.589 988	sq. kilometres (km ²)

